



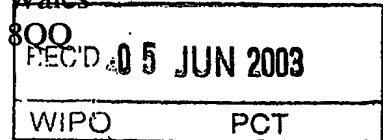
PCT/GB 03/00801
Rec'd PCT/PTO 20 AUG 2004



INVESTOR IN PEOPLE



The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 800



I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4)

Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

PRIORITY DOCUMENT

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

Signed

J. Evans

Dated

5 March 2003

BEST AVAILABLE COPY

**The
Patent
Office**

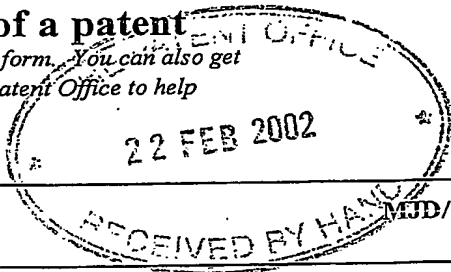
1/77

Act 1977

16)

Request for grant of a patent

Notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



22 FEB 2002

The Patent Office

Concept House
Cardiff Road
Newport
South Wales NP10 8QQ

Your reference

MJD/59256/000

25FEB02 E698313-13 D02882
F01/7700 0.00-0204205.9

Patent application number
(The Patent Office will fill in this part)

0204205.9

Full name, address and postcode of the or of each applicant (*underline all surnames*)

G W Pharma Limited
Porton Down
Science Park
Salisbury
Wiltshire
SP4 0JQ

Patents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

United Kingdom

833/340001

Title of the invention

A Dispenser

Name of your agent (*if you have one*)

BOULT WADE TENNANT

"Address for service" in the United Kingdom to which all correspondence should be sent (*including the postcode*)

VERULAM GARDENS
70 GRAY'S INN ROAD
LONDON WC1X 8BT

Patents ADP number (*if you know it*)

42001

If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (*if you know it*) the or each application number

Country

Priority application number
(if you know it)

Date of filing
(day/month/year)

If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

Is a statement of inventorship and of right to grant of a patent required in support of this request?

Yes

(Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

See note (d))

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form -

Description 7 ✓

Claim(s) 2 ✓

Abstract -

Drawing(s) 4 + 4 ✓

10. If you are also filing any of the following, state how many against each item.

Priority documents -

Translations of priority documents -

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77) 1 ✓

Request for substantive examination (Patents Form 10/77)

Any other documents (Please specify)

11

I/We request the grant of a patent on the basis of this application

Signature

Date

Barts Wade Tennant

22 February 2002

12. Name and daytime telephone number of person to contact in the United Kingdom

Martyn J. Draper
020 7430 7500

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office if an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either a direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 01645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

A DISPENSER

The present invention relates to a dispenser. In particular, the invention relates to a dispenser for dispensing materials such as dangerous products like drugs, poison, toxic materials or the like.

Our earlier application GB 00 25811.1 discloses an apparatus for dispensing such materials. This apparatus has a device referred to as "an axial compression dispensing device". This device has a cartridge in which a security system is provided to prevent unauthorised dispensing of the material from the device. The cartridge has a housing containing a container filled with the material to be dispensed. The container is axially movable within the housing. Within the housing, beneath the container, is an upper plate arranged to contact the bottom of the container. The upper plate is linked by a frangible axial stem to a lower plate from which a plurality of posts project towards respectively aligned apertures in the lower face of the housing. This system is designed so that it will only operate with an authorised key. The key has a number of pins which correspond to the posts. These pins are inserted through the apertures and provide an axial force on the disc. In this way, the lower plate can be moved towards the container so that when a user generates an axial force to dispense material from the device, the container is held against axial movement away from the dispensing end of the cartridge and hence dispenses the material as required.

If unauthorised use is attempted by pushing a prong through one of the apertures, this will generate a bending force on the frangible member, which, if the force is increased, will then break. This then

prevents the lower plate being moved axially to the position when it is required to be held for authorised dispensing.

- 5 The present invention is directed to a modification of the dispenser to improve this dispensing system.

10 According to the present invention, there is provided a dispenser having a socket for receiving a cartridge of material to be dispensed, the dispenser comprising a plurality of pins arranged, in use, to engage in a corresponding plurality of apertures in the cartridge to enable dispensing of the material, the dispenser further comprising a mechanism to move the pins, upon
15 insertion of the cartridge into the socket, from a retracted position in which they will not engage with the apertures to a deployed position in which they will engage with the apertures.

20 With this arrangement, the pins can be moved into a retracted position. In this position their configuration does not match the configuration of apertures in the cartridge, such that the user is less likely to make the connection between the pins and the
25 cartridge thus providing a further security mechanism. Preferably, if the pins are concealed from the view of the user, he will be unaware of the existence of the security mechanism. All that will be visible to the user is the apertures within the cartridge, but it
30 will not be apparent what purpose these are serving.

Preferably, in the retracted position, the pins are adjacent to the wall of the socket. More preferably, recesses are provided in the walls of the socket, or
35 an inwardly extending lip is provided around the open end of the socket, as this will provide cover for the pins in the retracted position.

Any form of mechanism may be used to deploy the pins, for example, a sensor may detect the insertion of the cartridge, whereupon a motor may deploy the pins.

5 However, the mechanism to deploy the pins is preferably a mechanical arrangements, activated by contact between the cartridge and the mechanism, such that the insertion force of the cartridge deploys the pins.

10 Preferably the pins are provided on a plurality of arms which are pivotably attached within the socket. Preferably, these arms are arranged to abut one another in the deployed position. This provides a way
15 of reliably locating the pins with respect to one another in the deployed position to ensure that they are correctly aligned with the apertures within the cartridge.

20 The socket may simply be left open. However, preferably, a cover is provided to close the open end of the socket, the cover being movable to an open position by the insertion of the cartridge.

25 An example of a dispenser in accordance with the present invention will now be described with reference to the accompanying drawings, in which:

30 Fig 1 is a diagrammatic sectional view of a secure dispensing device as disclosed in GB 00 25811.1;

35 Fig 2 is a perspective view of a cartridge and dispenser in accordance with the present invention in which the internal mechanism with the dispenser is shown in dashed lines;

Figs 3A to 3C are schematic perspective views of

various stages of the insertion of the cartridge into the dispenser;

5 Figs 4A and 4B are plan views showing the position of the pins in the retracted and deployed positions respectively.

Referring first to Figure 1, this shows in diagrammatic sectional form a simplified secure dosage
10 container as disclosed in GB 0025811.1. Denoted 1 is a standard small elongate pressurised aerosol container which has a generally cylindrical body 2 between a lower flat end and an upper end which is sealed by a swaged-on cover 3 carrying a valve housing
15 with protruding valve stem 4. The contents are pressurised and there is a dip tube so that if valve stem 4 is moved downwards, material is dispensed from within pressurised container 1.

20 The outer housing consists of a generally cylindrical sleeve 10 having a transverse lower end wall 11, an intermediate apertured transverse wall 15 and a cap 13 which can be welded to the end of the cylindrical sleeve 10, e.g. at 14. Cap 13 includes an aerosol
25 dispensing nozzle 16 of known design which is set substantially in the centre of the cap and aligned appropriately with a transverse passage in the cap through which the nozzle can be seen in the drawing. Cap 13 is e.g. ultrasonically welded to the edge 14 of
30 cylindrical portion 10 when the outer housing is assembled around the canister 2 and a plate and stem member generally denoted 30 shown in the drawing.

35 Plate and stem member 30 consists of, as seen in the drawing, an upper plate 31 adapted to contact the underside of body 2, a fracturable axial stem 33, and a lower plate 34 from which project a number (four are

as shown in the drawing) of downwardly directed posts 35. These posts are of different downward axial extent and they are sized and located to match apertures 36 located in the end wall 11 of the outer casing. The stem member 30 passes through an aperture in the centre of transverse wall 15.

The dimensions of the various components are so chosen that when the cap 13 is ultrasonically welded to edge 14, the plate and stem member 30 and pressurised canister 2 effectively occupy substantially the entire axial length of the interior of the outer housing.

The thickness of end wall 11 is chosen such that apertures 36 may provide axial guidance to a set of prongs 38 located on a key disc 39. Prongs 38 are of different heights corresponding to the heights of downwardly depending posts 35 on disc 34, and the arrangement of the prongs 38 is such that they can be registered with holes 36 and the end of prongs 38 then brought simultaneously into contact with the ends of posts 35. Further axial movement than that necessary to effect such contracting means that the disc 34 moves further away from wall 11, and disc 31 exerts pressure on the base of the pressurised canister 2 which, because it can move relative to the cap 13 which holds the nozzle, moves the dispensing tube 4 into the container, thus releasing material under pressure via nozzle 16.

If an attempt is made to effect such dispensing by pushing a prong through a single one of apertures 36, although it may contact the end of one of the downwardly depending posts 35, as soon as any pressure is applied, this will cause disc 34 to tilt, stem 33 to bend and then immediately break, and thereafter the pressure plate 31 cannot be raised by axial force

transmitted through stem 33. Furthermore, it is not then possible to move canister 2 up by pushing a prong further in through hole 36, as plate 34 can only move up until it contacts the transverse fixed wall 15.

5 Because the transverse wall 15 is fixed, although pushing a prong in through aperture 36 enables plate 34 to be abutted against wall 15, but not allow it to be moved any further, and in particular, because stem 33 is already broken, it does not allow pressure plate 10 31 to exert any pressure on the bottom of canister 2 which might effect dispensing.

As can be seen by contemplating Figure 1, the secure dispensing container needs to be provided with a key 15 to enable material to be dispensed from it, the key consisting of key disc 39 with the actuating posts 38 of different heights on it. An additional benefit of the particular presentation shown in Figure 1 is that it is easy to position a seal across the end of wall 20 11 covering the apertures 36, which seal must be pierced by the prongs 38 when the dispensing device is first used, or which must be torn off in order to provide access to apertures 36 for posts 38. In either event, it is clear whether the dispensing 25 device has been put to use or not.

In the present invention, the key disc 39 is replaced by a system of retractable pins as will now be described with reference to Figs 2 to 4.

30 Figs 2 and 3 show a cartridge 40 which operates according to the principle described with reference to Fig 1. The dispenser 41 has a socket 42 to receive the cartridge 40. The socket 42 is closed by a spring loaded lid 43 shown in Figs 3B and 3C. This is simply 35 provided to keep dust out of the socket 42.

Within the socket 42 are a plurality of pins 44 (seven of which are shown in this particular example). These pins are provided on three pivotal arms 45. Each of these arms is pivoted about a pivot point 46 in the corner of the socket 42 as best shown in Figs 4A and 4B. At each of these corners is a spigot 47 which extends towards the mouth of the socket 42. These spigots provide cam surfaces which engage with complementary axially extending grooves 48 at each corner of the cartridge 40 which generates a force to rotate the arms 45 from the position shown in Figs 3A and 4A, via the intermediate position of Fig 3B, to the final position of Figs 3C and 4B. In this position, the pins 44 are positioned such that they fit into the apertures 36 in the bottom of the cartridge 40. As shown in Fig 4B, each of the arms 45 contains an abutment portion 49 which abuts against an adjacent arm so that the pins are positively positioned in the correct position.

This pin assembly is provided on a carrier 50 which is axially movable within the socket 42. This carrier is selectively locked in place by an electromechanical latch (not shown). When the carrier is unlocked, pressing the cartridge 40 into the socket causes it to move up and down with the carrier so that no dispensing takes place. When the carrier is locked, pressing the cartridge into the socket causes the pins to provide an axial force on the posts 35 generating sufficient force to dispense material as described above.

CLAIMS

- 5 1. A dispenser having a socket for receiving a cartridge of material to be dispensed, the dispenser comprising a plurality of pins arranged, in use, to engage in a corresponding plurality of apertures in the cartridge to enable dispensing of the material, the dispenser further comprising a mechanism to move
10 the pins, upon insertion of the cartridge into the socket, from a retracted position in which they will not engage with the apertures to a deployed position in which they will engage with the apertures.
- 15 2. A dispenser according to claim 1, wherein in the retracted position, the pins are adjacent to the wall of the socket.
- 20 3. A dispenser according to claim 2, wherein recesses are provided are provided in the walls of the socket to receive the pins in the retracted position.
- 25 4. A dispenser according to claim 2 or claim 3, wherein an inwardly extending lip is provided around the open end of the socket.
- 30 5. A dispenser according to any one of the proceeding claims, wherein the mechanism to deploy the pins is a mechanical arrangement activated by contact between the cartridge and the mechanism such that the insertion force of the cartridge deploys the pins.
- 35 6. A dispenser according to any one of the proceeding claims wherein the pins are provided on a plurality of arms which are pivotably attached within the socket.

7. A dispenser according to claim 6, wherein the arms are arranged to abut one another in the deployed position.

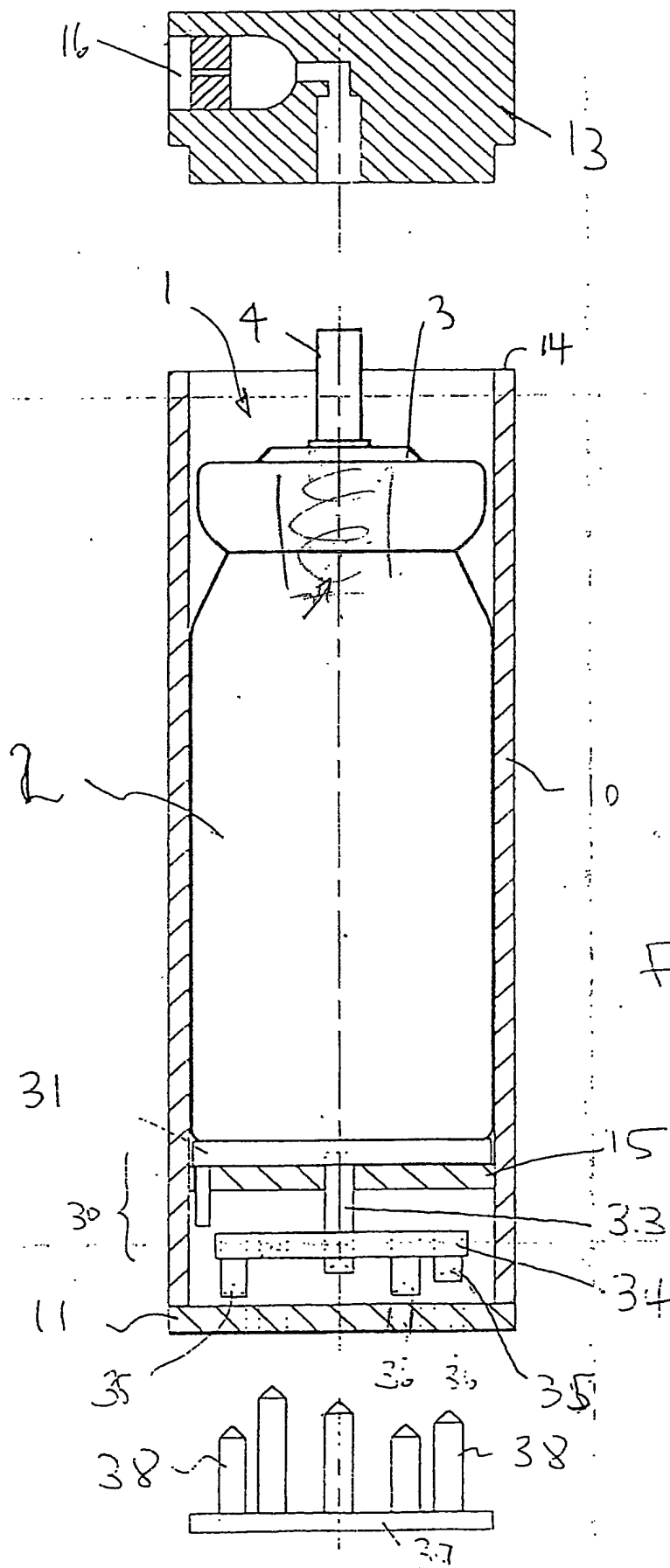
5 8. A dispenser according to any one of the proceeding claims, wherein a cover is provided to close the open end of the socket, the cover being moveable to an open position by insertion of the cartridge.

10

15

20

25



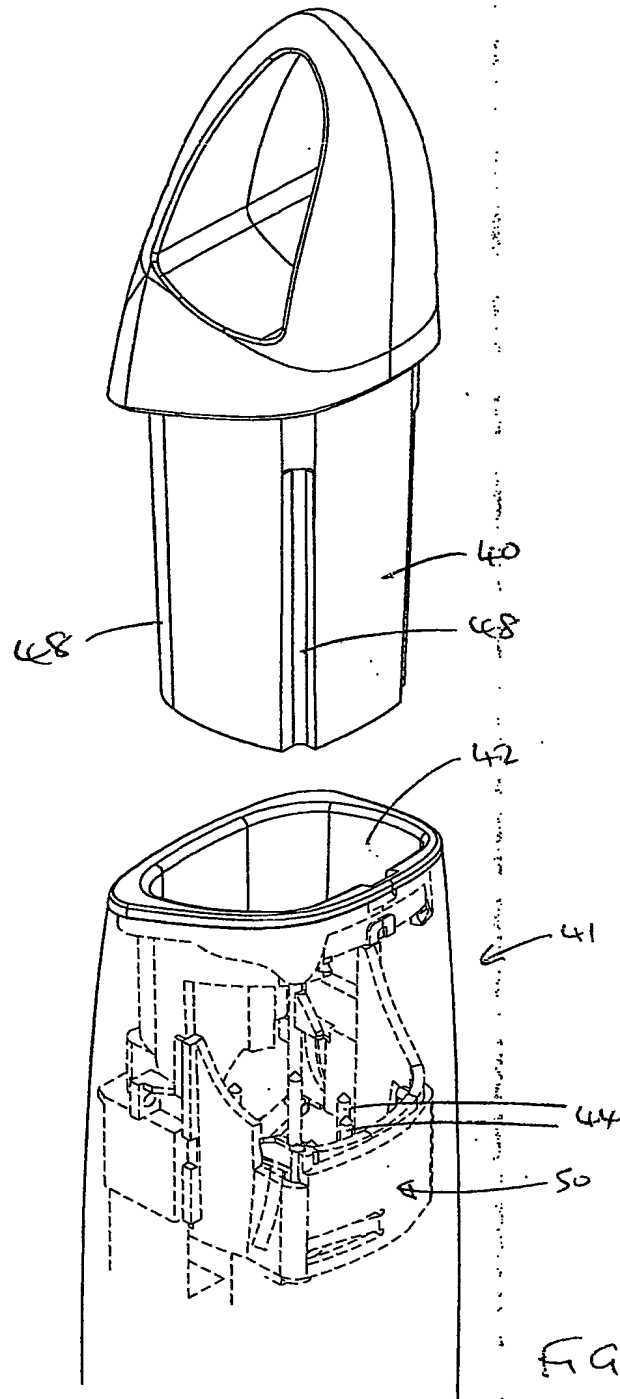
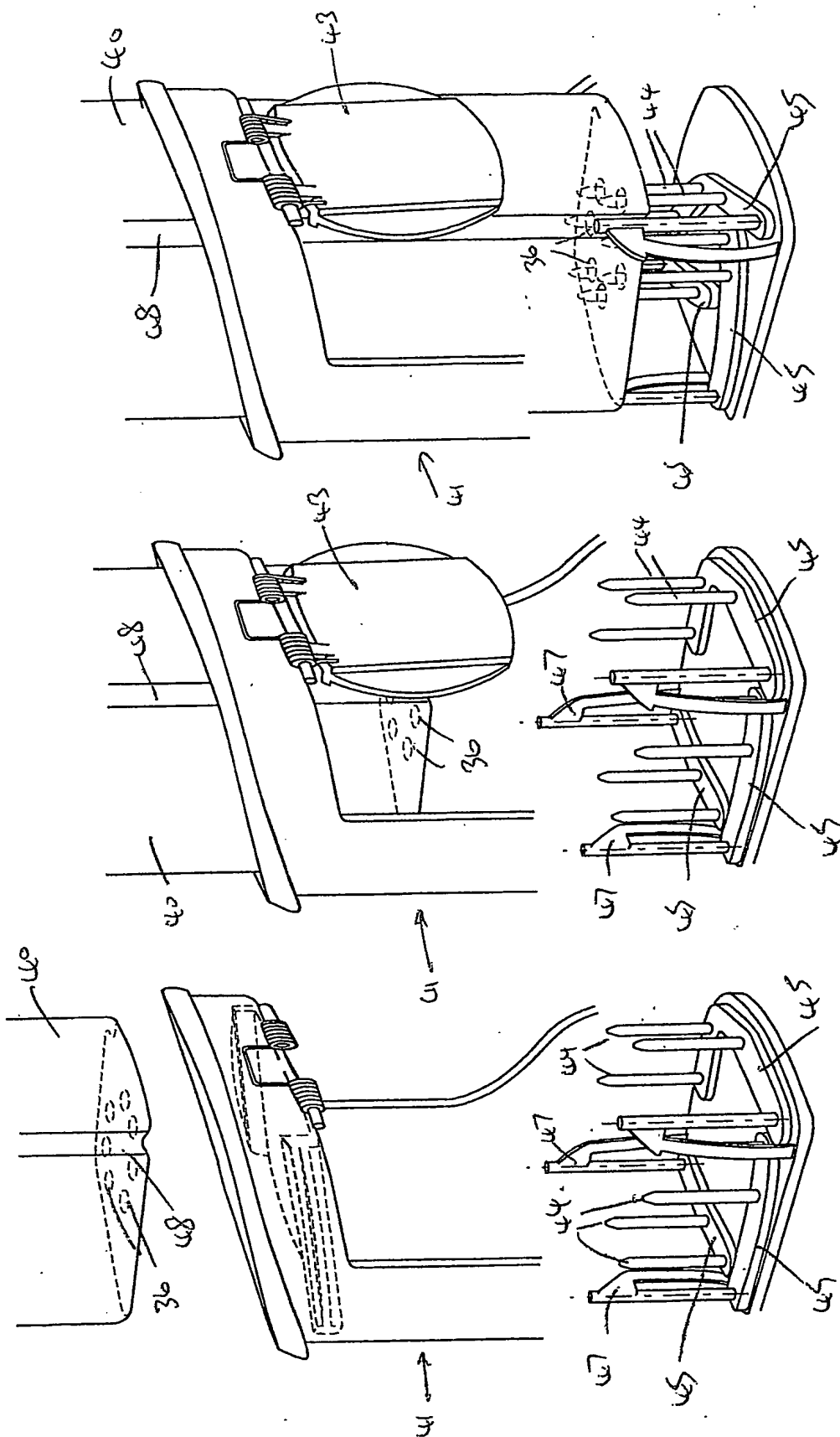


FIG 2



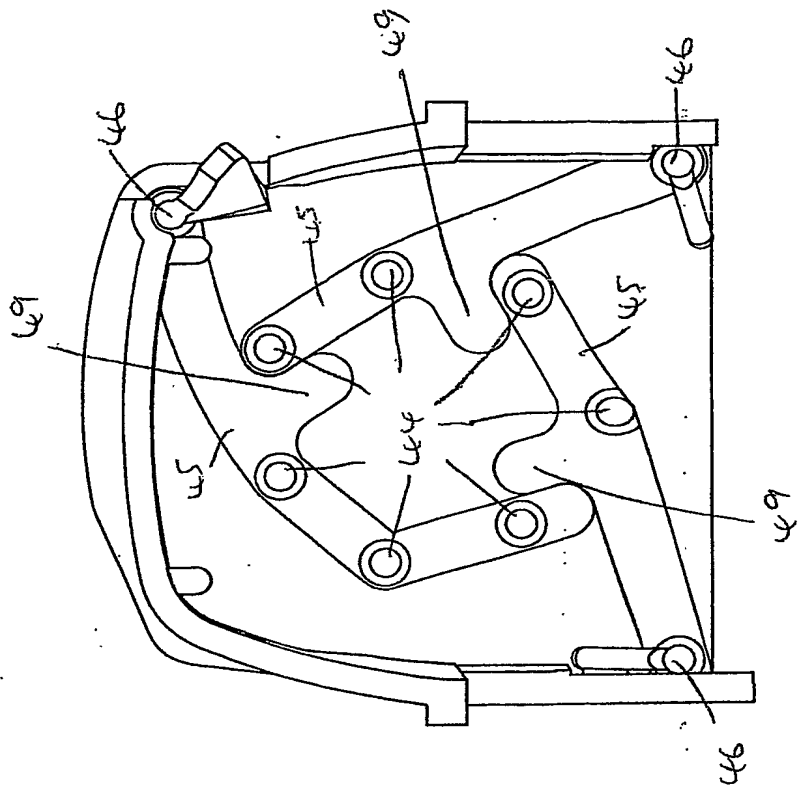


FIG 4B.

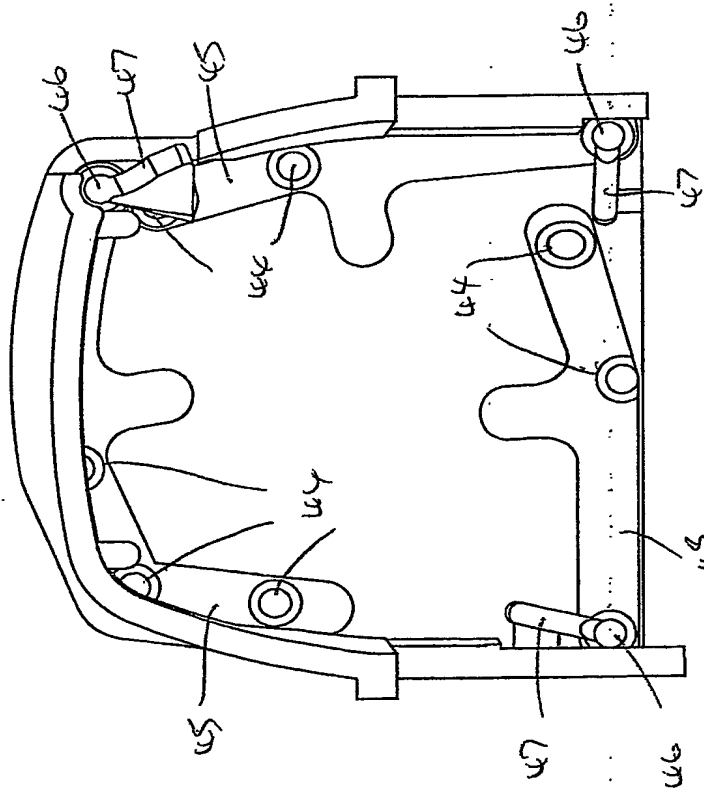


FIG 4A

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☒ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☒ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER: _____**

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.